

Childsmile



National Child Oral Health Improvement Programme
- funded by Scottish Government and implemented
via NHS Scotland and partners

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Marketplace workshop on best practices conducive
to reaching SDG 3.4, THON Hotel City Centre,
Brussels



Background



- Oral diseases highly prevalent conditions affecting more than 3.5 billion people around the world
- Dental caries:
 - most common disease globally
 - associated with socioeconomic status and social determinants of health
 - shares common risk factors with other non-communicable diseases – notably free sugars
 - imposes major economic burden on society

Background to Childsmile



- High rates of dental caries in children in Scotland
 - 2003, 5-year-olds: 55% with decay
- Clear social gradient in child oral health in Scotland
- Traditional Dental Health Education approach had limited effectiveness



Childsmile



Childsmile is a national programme designed to improve the oral health of children in Scotland and reduce inequalities both in dental health and access to dental services

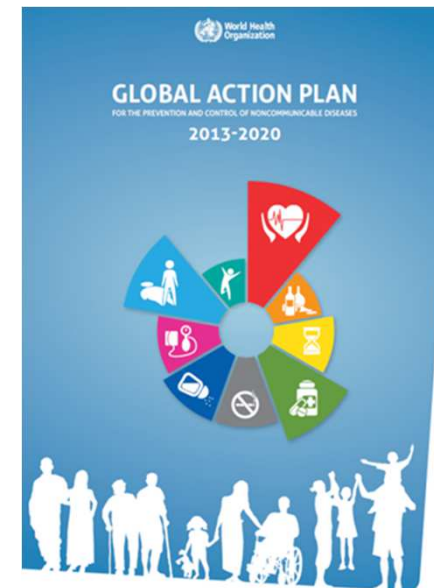
- Piloted from 2006; Integrated nationwide from 2011



Public Health Approaches Incorporated into Oral Health Improvement Programme



- Evidence-based
- Common risk factor approach (NCD)
- Multi-agency working
- Community engagement
- Proportionate universalism
- Upstream/midstream/downstream

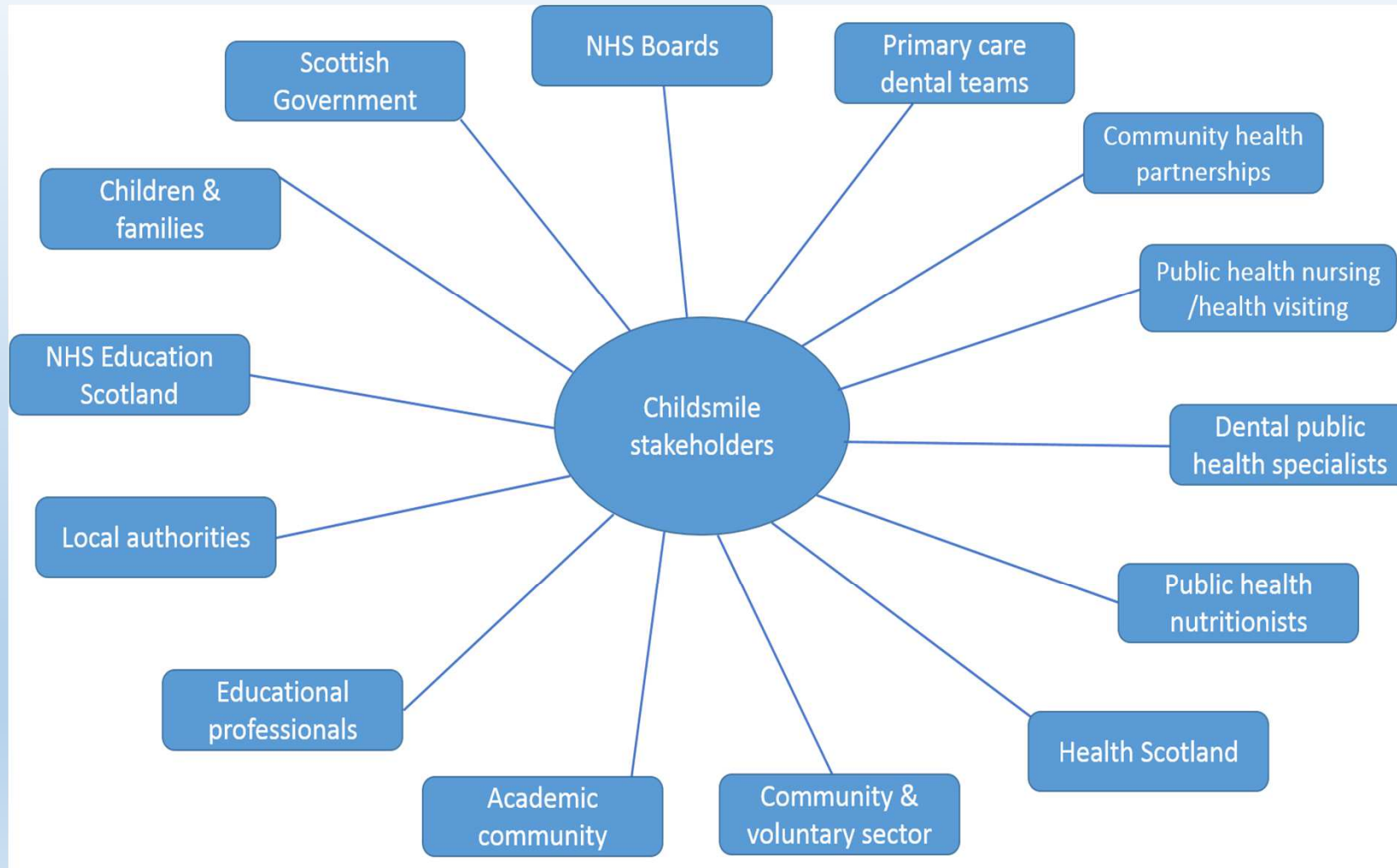


Developing the Programme



- Theory-based approach
- Multi-disciplinary stakeholders involved in mapping out what interventions should lead to improved child oral health and processes by which this should occur
- Logic model development

Childsmile Stakeholders/Partners



Childsmile Community Activity



- Child education setting
 - Supervised toothbrushing; fluoride varnish; diet and nutrition
- Dental primary care setting
 - Preventive-orientated practice
- Child health surveillance pathway (birth to 5 years)
 - Advice from public health nurse; referral to Dental Health Support Worker
- Dental Health Support Worker activity
 - Advice in family home / local community; link family to primary dental care and local community support groups
- Community engagement
 - Involvement with local communities and community agencies

Supervised Toothbrushing



- Nursery: universal coverage across Scotland
 - 3 and 4 year olds
 - expanding to 2 year olds (places for more vulnerable children)
- Primary School: 5 and 6 year olds
 - targeted to schools in most disadvantaged areas
- National procurement contract
 - fluoride toothpaste, toothbrushes, distribution
- Toothbrushing supervised daily by education staff
- National Standards - including cross-infection control



Fluoride Varnish Application in Nursery & School: Targeted

- Minimum of 20% most socially disadvantaged section of the nursery and P1-P4 populations are targeted for fluoride varnish application
- Fluoride varnish applied by Extended Duty Dental Nurses in education setting x2 per year

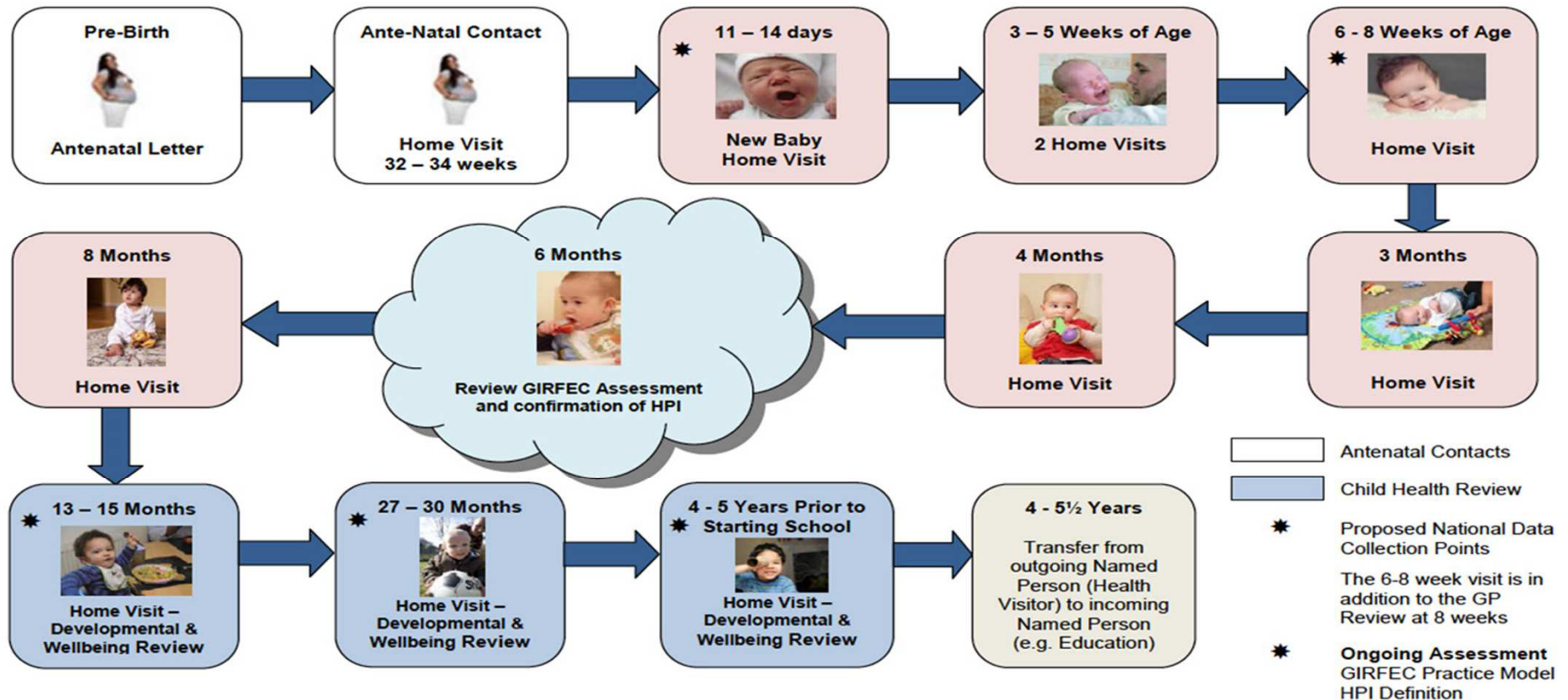


Childsmile incorporated into Child Health Surveillance Pathway



- Oral health incorporated into primary care child early years surveillance pathway
- Child and family seen on multiple occasions by public health nurse between birth and 5 years
- Oral health advice and resources provided
- Linkage to community-based (“lay”) Dental Health Support Worker if additional oral health support required

Child Health Surveillance Pathway

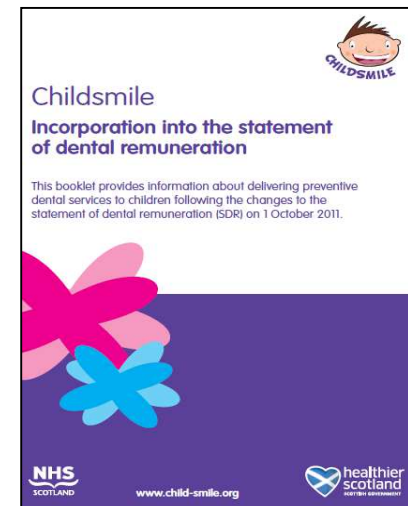


Pre-populate forms with dental information

National Primary Dental Care Contract



- Change to national primary dental care contract for children in 2011
- Inclusion of fees to dental practices for preventive care for the first time



Childsmile Community Support

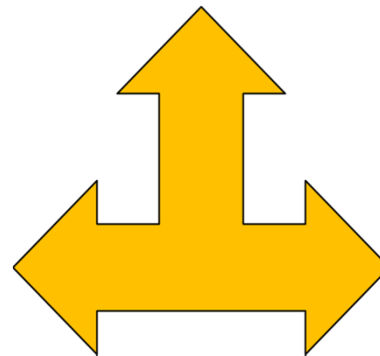


Public Health Nurse



Dental Health Support Worker

Primary Care Dental Practice



Non-dental Local Community /
Third Sector Organisations and
Services



Evaluation of Childsmile



- Integrated theory-based evaluation, funded by the Scottish Government, important feature of the programme from its outset
- Robust national data monitoring systems (including routine administrative data [health and education] and bespoke Childsmile IT system)

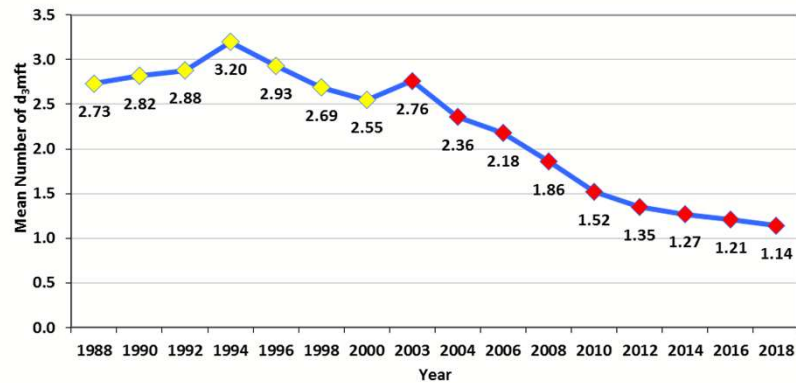
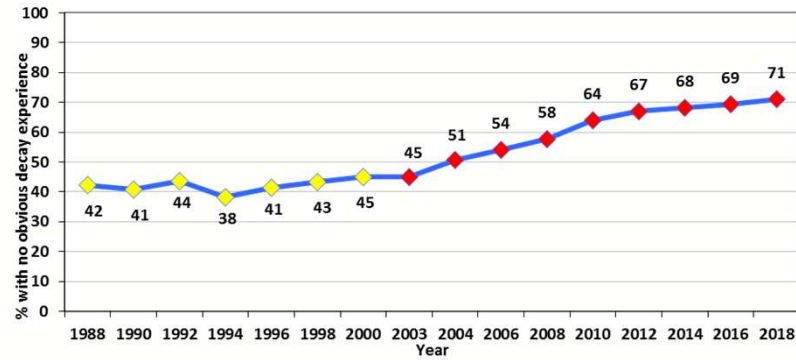
Evaluation of Childsmile



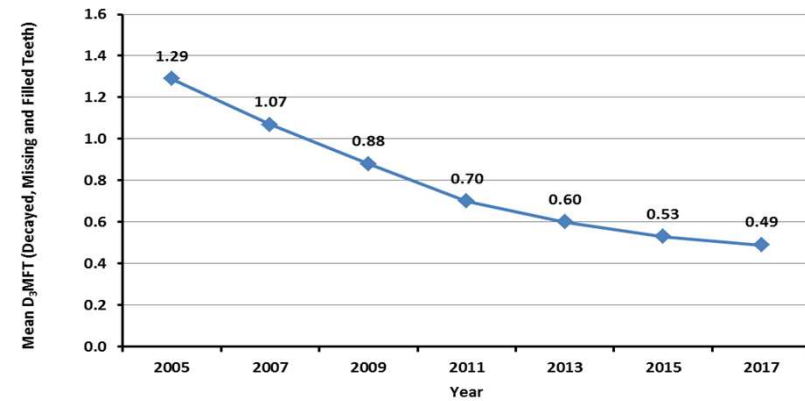
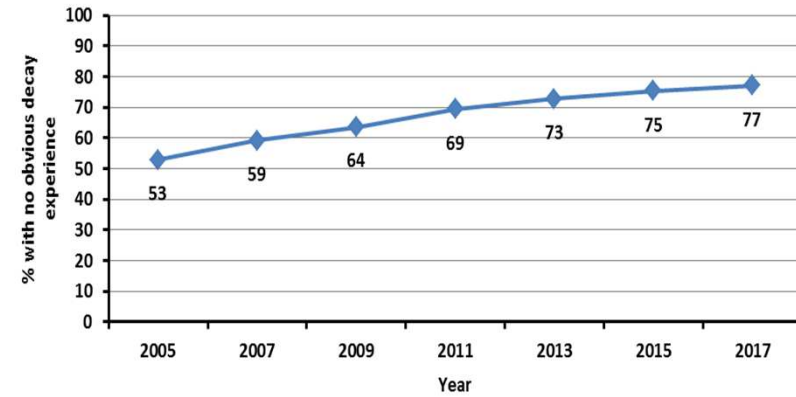
- Process evaluation:
 - monitoring of programme activity data re logic model
 - investigation barriers & facilitators to implementation
 - facilitates on-going refinement to further enhance programme delivery
- Outcome evaluation:
 - assessing effectiveness and cost-effectiveness
 - large cohort data-linkage studies, natural experiments, RCT, economic evaluations

Trends in the proportion of children with no obvious decay experience and mean d_3mft/D_3MFT in the 5 and 11 year old population in Scotland

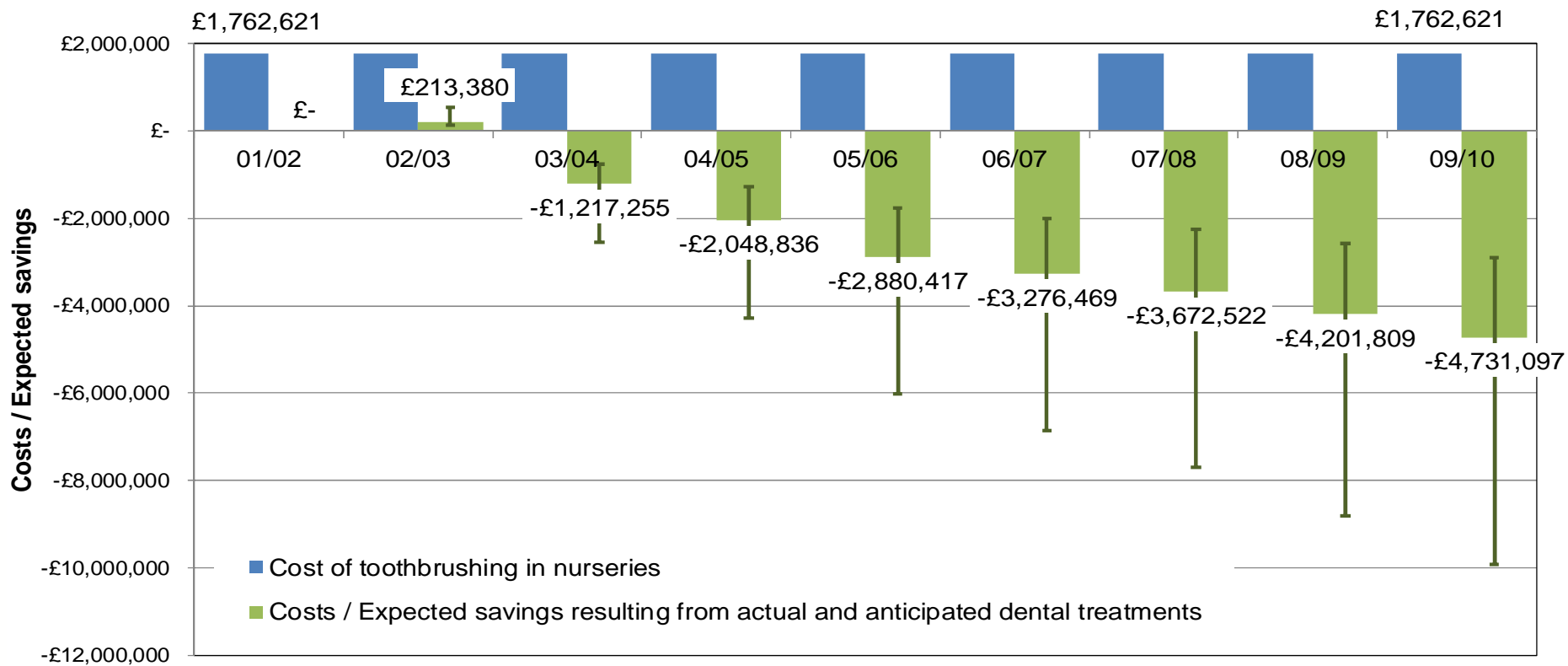
5 year olds



11 year olds



Cost of nursery tooth-brushing programme and costs / expected savings resulting from actual and anticipated dental treatments



Anopa Y, McMahon AD, Conway DI, Ball GE, McIntosh E, Macpherson LMD. PLOS ONE 2015.
 DOI:10.1371/journal.pone.0136211

Data Linkage Cohort Study: 5-year-olds 2015 (n=50,379)



- Children born in 2010/11 followed-up with linkage of individual health, school and social data from birth
- Dental examination at 5 years of age (2015)
- Effect of individual Childsmile interventions on dental health and other health outcomes measured at 5 years of age

Data Linkage Cohort Studies



Investigate Childsmile impact on:

- Child dental health
- Dental extractions under general anaesthesia
- Body Mass Index
- Health inequalities
- School attendance
- Looked after children & link to caries
- Ethnicity and its link to caries
- Economic evaluation of Childsmile

Effect of Tooth brushing Consent on Decay Experience – Logistic Regression Adjusted by SIMD

SIMD Interaction Effect: $p < 0.001$

Tooth brushing Consent	n	Decay	Adjusted OR	95% CI	p-value
No Consent	5,511	29%	-	Referent	
Up to 1 Year	3,565	36%	1.01	0.92 1.11	0.970
1 to 2 years	12,579	32%	0.93	0.87 1.01	0.069
2 plus years	28,724	29%	0.81	0.76 0.87	<0.001

Adjusted by area-based deprivation (SIMD), sex and age

Views of School Head Teachers



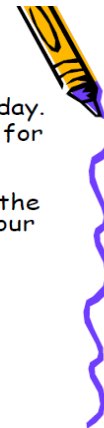
From the start

- Our children learn that brushing their teeth is an important skill right from the start.
- Pre-5 children follow a skills path at the Early Level of Curriculum for Excellence:



The benefits.....

- Tooth brushing is a routine part of the infant day.
- Pupils develop independence and responsibility for their oral health.
- Good diet, especially reducing the amount of sugar we eat is reinforced through learning in the classroom, at assemblies and through growing our own food.
- Varnishing from Pre-5 to P5.
- Dental screening is beginning to show that children's oral health is improving.



“.....before the programme started all the children had no (anterior) teeth or their teeth were all black. Now the (nursery) children have nice teeth.....”

Challenges and Lessons Learned



- Traditionally, dental services tended to work in isolation with limited partnership working
- Introduction of new approaches requires period of transition, with varying rates of adoption to new ways of working
- Working more closely across primary care and education, and facilitating access to local support services e.g. welfare, debt and community food initiatives, essential
- Flexible approach required to meet needs and infrastructure of regional health boards and local authorities
- Process evaluation supports programme development, facilitating response to identified challenges and the changing early years landscape

Childsmile Summary



- Core funding from Scottish Government to NHS Boards
- Sustainable programmes in nurseries & schools
- Highly skilled and trained workforce developed
- Integrated into generic child health pathway
- Links with community groups in disadvantaged areas
- Prevention into primary care dental contract

Childsmile Summary



- Robust programme of research and evaluation
- Major improvements in child oral health
- Cost savings to health service demonstrated in relation to nursery toothbrushing programme
- On-going developments for tackling health inequalities
- Components of Childsmile now adopted in a number of countries

Acknowledgements



Childsmile Stakeholders

Scottish Government

NHS Boards

Childsmile teams

General Dental Practitioners / Public Dental Services / Dental Public Health / Health Visitor

Nursery and School staff

Parents and children

University of Glasgow Dental School, Community Oral Health Section

Information Services Division / Practitioner Services Division

University of Dundee: Dental Health Services Research Unit / Health Informatics Centre

NHS Education for Scotland

NHS Health Scotland

Childsmile Executive Committee

National Services Scotland

Platform for Better Oral Health in Europe

